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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,090	07/17/2003	Elie Awad	END9-2002-0101US1	2861
7590 02/12/2004			EXAMINER	
Christopher R. Pastel Hancock & Estabrook, LLP 1500 MONY TOWER I P.O. Box 4976 Syracuse, NY 13221-4976			NGUYEN, DILINH P	
			ART UNIT	PAPER NUMBER
			2814	
DATE MAILED: 02/12/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/623,090		AWAD ET AL.	
	Examiner		Art Unit	
	DiLinh Nguyen		2814	

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-4 and 9-13, drawn to a semiconductor device, classified in class 257, subclass 666.
 - II. Claims 5-8, drawn to a method for making a semiconductor device, classified in class 438, subclass 123.
2. The inventions are distinct, each from the other because:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, it would be possible to form a semiconductor device comprising the step of etching with an etching liquid a portion on an upper surface of a lead to form the lead with L shaped.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Christ Pastel on 2/4/04 a provisional
election was made without traverse to prosecute the invention of Group I, claims 1-4 and 9-13. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 5-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 9-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Palagonia (U.S. Pat. 5751057).

- Regarding claim 1 and 9, Palagonia discloses a semiconductor device (figs. 1-2) comprising:

- a central region 16 having a first plurality of sides;

- a peripheral edge region having a second plurality of sides positioned in spaced relation around the central region;

- a first set of leads 50 (fig. 2) extending from each of the second plurality of sides, each of the first set of leads being partially defined by a first terminal end 51, first

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opposing side surfaces each of which extends along a respective first longitudinal axis, and a lower surface that extends in a first plane;

a second set of leads 32 extending from the second plurality of sides, each of the second set of leads being partially defined by a second terminal end, second opposing side surfaces each of which extends along a respective second longitudinal axis, and an upper surface that extends in a second plane; and

wherein each of the first set of leads are positioned in staggered relation to corresponding ones of the second set of leads such that the first terminal ends are spaced from the second terminal ends by a first predetermined distance, each of the first longitudinal axes are substantially parallel to and spaced from the adjacent ones of the second longitudinal axes by a second predetermined distance, and the first plane is spaced from the second plane by a third predetermined distance.

- Regarding claim 10, Palagonia discloses a die pad 16 positioned in spaced relation to the first and second sets of leads.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2-4 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palagonia (U.S. Pat. 5751057) in view of Yagi et al. (U.S. Pat. 6201292).

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- Regarding claims 10-13, Palagonia fails to disclose an epoxy resin encapsulating the package leaving a portion of the leads exposed.

Yagi et al. disclose a semiconductor device (figs. 1-2) comprising:

a chip 7; wherein the chip having a predetermined number of input/outputs and mounted on a die pad 4; wherein the die pad positioned in spaced relation to the leads; wire bonds 8 interconnecting the input/outputs of the chip to corresponding ones of the leads; and an epoxy resin 9 encapsulating the package leaving a portion of the leads exposed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Palagonia to improve the reliability for the semiconductor package, as shown by Yagi et al.

- Regarding claims 2-4, Yagi et al. disclose the leads are formed by a mask having resist material arranged to define the pattern of the leads (column 11, lines 16 et seq.).

Additionally, the limitations of claims 2-4 are considered a product-by-process limitation. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

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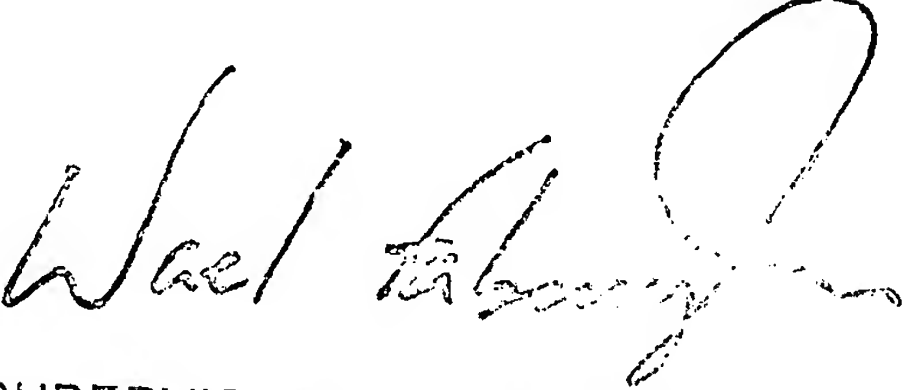
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DiLinh Nguyen whose telephone number is (571) 272-1712. The examiner can normally be reached on 8:00AM - 6:00PM (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

DLN
February 6, 2004


SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2800